

Boardpaper



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Stora Enso Consumer Board Newsletter 4/2019

Renewable tubes

for cosmetics packaging

Innovations and functionality

at the European Carton
Excellence Awards

Circular economy

means resource efficiency and value



Dear reader,

In the previous issue of Board Paper we focused on cups. A great topic as paper cups have a low carbon footprint, which is cut by half again if the cups are recycled. Trials at our Langerbrugge Mill proved that paper cups can be recycled into magazine paper, and the latest trials in Sweden showed that they are suitable for the production of recycled packaging board.

Today we dig deeper into circular bioeconomy. Why is it important to consider circularity and what does it mean in practice? And what is our Circular Packaging Programme? Join us on a journey to circularity made easy and inspiring.

Sanna Heiskanen
Editor

Driving circular bioeconomy

Circular economy means using materials efficiently and keeping their value as high as possible. Stora Enso's Circular Packaging Programme is geared towards increasing the circularity of packaging. Consumer Board division's Sustainability Director **Tiina Pursula** heads the programme and explains what exactly we do.

What is circular bioeconomy?

Recycling is part of circularity, but it is not enough on its own. To go beyond that, circularity means also switching from fossil-based materials to renewable materials. In circular bioeconomy, products are bio-based.

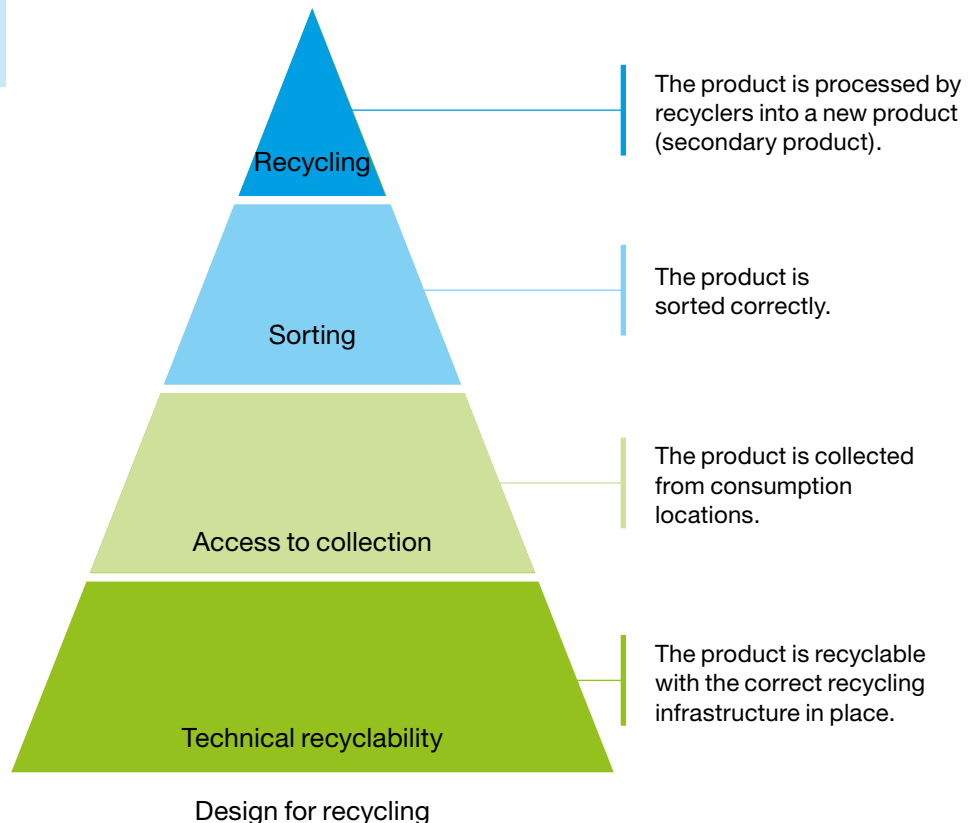
Growing trees and plants absorb carbon dioxide from the atmosphere, and the carbon is stored in products. Value chains are resource-efficient, and products are shared, reused, remanufactured and recycled. Finally, they are used for renewable energy or biodegrade. Organic waste streams are also utilised.

How does Stora Enso promote circular economy?

Our business is based on a renewable raw material, trees, which grow back in sustainably managed forests and are part of the natural carbon cycle. We design our products

From technical recyclability to actual recycling

- Different markets have different requirements for recyclability and also different recycling infrastructure.
- Different products have different end uses and consumption locations.
- We collaborate with partners to ensure we can collectively respond to market-specific recycling requirements.



for circularity and test their recyclability. Our production is resource-efficient, and we utilise almost all the waste from our processes. However, circular economy needs more than just us. It is a value chain effort, and therefore we have launched our Circular Packaging Programme.

What is the Circular Packaging Programme?

Our Circular Packaging Programme consists of cross-functional workstreams in the Stora Enso Consumer Board division to develop partnerships for driving collection and recycling of paperboard packaging. We work with our value chain partners, participate in industry collaboration and co-create with our customers for circular design.

What does value chain collaboration mean in practice?

We are actively developing, for example, collection and recycling concepts for paper cups; hence our recycling trials and ambition to start large-scale recycling of cups at our Langerbrugge paper mill. We are also developing utilisation of used beverage cartons and barrier materials and have a number of pilots, demonstrations and proof of concept studies ongoing.

What is circular design?

Circular design refers to designing for the whole system and product life cycle stages instead of just designing the product. It takes into account the materials used, manufacturing, the product distribution and potential to reuse, refurbish, remanufacture or recycle instead of the material ending up as waste. Circular design guidelines are incorporated in our R&D and product development processes. The result can be a product optimisation or new innovation.

What kind of industry collaboration exists for circularity?

One important industry effort is to tackle the global plastic waste problem. Therefore, we have joined Ellen MacArthur Foundation's New Plastics Economy Global Commitment. Stora Enso's role here is to create alternatives to unnecessary plastics, to come up with solutions that are made of renewable materials that are functional and can be recycled. Naturally, we are also a member in associations driving the circularity of paperboard packaging such as ACE, EXTR:ACT and GRACE, for example.

What is Stora Enso's approach to recyclability?

In line with the ISO definition of recyclability, we see recyclability as a pyramid, where the requirements get higher on each level. The first level is technical recyclability, which means that the product is recyclable within the existing infrastructure. The second level requires that there is collection in place, and the third level also requires sorting. The top level is actual recycling, which means that the product is actually recycled into new products.

What can we expect from the Circular Packaging Programme going forward?

Our aim is to drive concrete value chain collaboration, where we together with our partners develop new concepts to collect and recycle paperboard packaging for valuable secondary products. We want to find innovative ways to keep the value of materials as high as possible over several life cycles. In order to do that, we also need to look closely into how packaging is consumed and disposed of and what motivates consumers to recycle. Circularity has to be made easy, fun and inspiring!



Tiina Pursula

“Circularity has to be made easy, fun and inspiring!”

Protecting food with barrier coatings

Barrier coating is an essential part of fiber-based packaging solutions for food and beverages. Various barrier coatings provide critical packaging properties such as humidity control, sealing properties, airtightness, light protection, oxygen permeability, aroma barrier, heat resistance, peelability and grease-proofing. Thanks to barrier coatings, paperboard can be used in far more end use applications compared with paperboard alone.

Today, it is possible to replace fossil-based polyethylene (PE) with plant-based PE in many applications. Our PE Green is fully renewable and fossil-free.

Yet it works like the traditional PE. That's why it offers an easy way for our customers to become more sustainable and provide more eco-friendly choices to consumers.

Biodegradable coatings can be produced from natural crops or from fossil raw materials, but the key is that, in the end, the biopolymer-coated paperboard breaks down into humus and CO₂. Our bio-coated boards are compostable in industrial composting. Typical end uses include paper cups, plates and cartons for fresh foods, sandwiches and ice cream.

Our barrier-coated boards have passed extensive lab, pilot and full-scale testing to ensure their technical recyclability. In the recycling process, the barrier coating and fibers are separated. The fibers are recovered and recycled into new products. The barrier reject can be further recycled into secondary products or used for energy. The recycling of virgin fiber packages provides good raw material for products such as white lined chipboard (WLC), liner and core board.

A new option is a board with dispersion barrier, which provides full fiber recovery in recycling.

Do you already know our Foodbox?

Foodbox™ by Stora Enso is an uncoated folding boxboard with a natural look and feel. It is suitable for folded trays and cartons for dry, chilled and frozen food and on-the-go products. It is available in six grammages, from 230 to 350 g/m². Foodbox has very good taste and odour neutrality, and it is hard-sized to suit even chilled and frozen conditions. With a barrier coating it can be used in primary packaging for a wide range of food products.





Ensocoat covers National Geographic

National Geographic is known as a world leader in geography, cartography and exploration. Its cover always comes with a stunning photograph, inviting the reader to explore the geographical, natural and cultural wonders of the Earth.

Now the Spanish, Portuguese and Italian special editions are printed on Ensocoat™ by Stora Enso. It provides a perfect surface to deliver the experience and to attract magazine buyers on the store shelf. It does not curl, and its excellent foldability keeps the edges of the magazine intact, providing long-lasting good moments to the readers.

Ensocoat was an easy choice for the publisher, RBA Group in Spain, since its good printing performance was already known from previous projects. As a solid bleached sulphate (SBS) board, Ensocoat has the smoothness, stability and strength to ensure good runnability and the superb print result required for National Geographic.

Paper cups recycled into white-lined chipboard

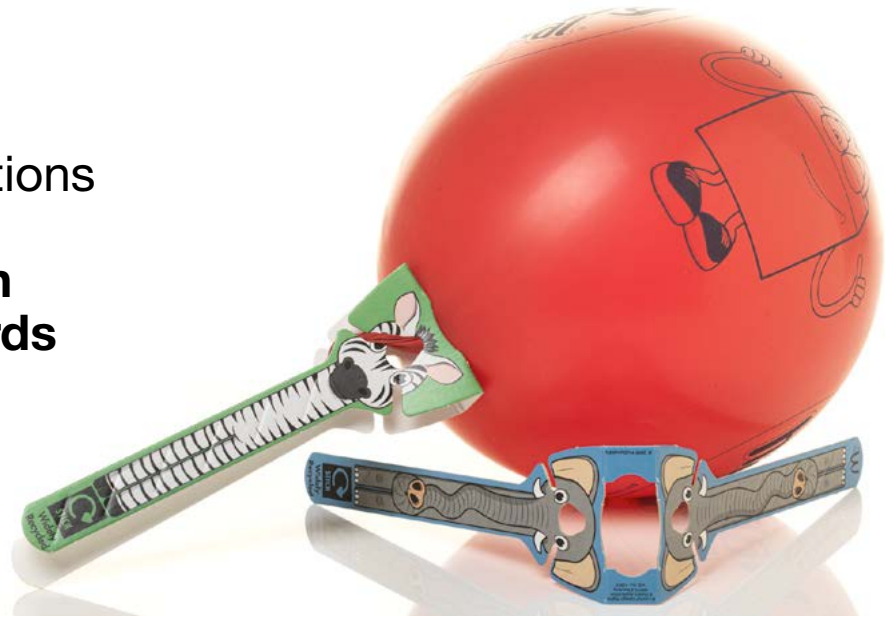
Stora Enso's paper cup recycling trials with Fiskeby, one of Europe's leading recycled packaging board manufacturers, show the way to circular bioeconomy. They confirmed that paper cups can be utilised to produce white-lined chipboard (WLC) without any investments or changes to the process conditions at Fiskeby Board Mill in Sweden.

"Recycling saves our planet's resources and energy in board production. Since paper cups are made from virgin fiber, they provide strong, high-quality raw material for the production of recycled board. The trials showed that we can recycle all kinds of paper cups at Fiskeby. The results also indicated that cups made of dispersion-coated Cupforma Natura would be the most energy and resource efficient to recycle, providing the highest fiber yield, comparable to non-polymer coated board materials," says **Arvid Sundblad**, CEO, Fiskeby Board.

According to **Ebba Mannheimer**, Head of Business New Barrier Solutions at Stora Enso, the recycling trials at Fiskeby confirm yet another use for the valuable fibres in paper cups, while strengthening our expertise in material recycling.

"We are actively developing new innovative solutions and business models to support coffee houses and fast food chains in responding to consumer needs for sustainable choices."

Warm congratulations to the winners of European Carton Excellence Awards 2019!



The European Carton Excellence Awards were handed out in Malta in September 2019. It was a great success for Stora Enso and our customers, who won three out of four Special Awards plus four Gold Awards.

A double winner was a cosmetics packaging for Swissgetal, which won both the **Public Award** and a **Gold Award** granted by the jury. The package is manufactured by Omaks Packaging from Ensocoat 2S™ by Stora Enso. The aim was to apply a simple design based on the dazzling whiteness of Ensocoat and a complex inlay structure that keeps the contents in place; the ampoules, spray bottle and face masks. The box is practical for consumers to use, and instead of a plastic tray and separators, the package features a unique carton inlay.

The **Save the Planet** award was granted to BalloonGrip™, an eco-friendly balloon stick made of CKB™ by Stora Enso. The material of the balloon holder needs to be tear resistant and strong to avoid bending when used by children. The BalloonGrip consists of two layers of CKB, laminated and combined with special debossing to reinforce the holder. Besides replacing plastic balloon sticks with a renewable option, the printability of the material makes it ideal for sales promotions with brand messages. The manufacturer is Van Genechten Packaging.

Innovations Award Material was granted to Cuckoo ice cream packaging. This premium sundae pack is converted by Cardbox Packaging from the biodegradable board Cupforma Special Bio™ by Stora Enso. After use it can be disposed of with organic waste that goes to industrial composting. Consumers can enjoy the ice cream with a clear conscience. “This could be a real game changer as the pack is made of a bio-coated cartonboard which also has a lovely soft touch feel, not often seen in the ice cream category. It is compostable due to the materials used,” the jury said.





Nestlé Pic-a-Pac Variety Cube for cereals won a **Gold Award**. It is manufactured by Graphic Packaging International, using Tambrite™ by Stora Enso. Nestlé wanted to create a convenient, out-of-home pack to stand out in the cluttered cereal aisle, improve functionality, convenience and quality for consumers as well as focus on environmental aspects such as recyclability. The carton cube features a bag-in-box concept that allows consumers to eat the cereal directly from the box as the bag inside allows milk to be added directly to the cereal.

Webecos cosmetics packaging was also granted a **Gold Award**. The luxurious promotional box holding seven products and a magazine is entirely made of Ensocoat 2S™ by Stora Enso and manufactured by Intergrafipak. Webecos wanted to have the natural look and feel of cartonboard with soft touch varnish for the high-class gift set to give their customers.



Yet another **Gold Award** was granted to Carte d'Or ice cream from Unilever, packed in a renewable and compostable bowl and lid manufactured by Seda Italy from Cupforma Natura 2Bio™ by Stora Enso. It replaces a plastic container made from polypropylene, saving 520 tons of plastic per year. The paperboard package is also 23% lighter in weight and its embossing underlines the natural, premium brand.

Renewable tubes for skin creams

Stora Enso has developed a paperboard tube for cosmetics packaging as a new, climate-friendly alternative to plastic tubes. The body of the tube is made from a barrier-coated, grease-resistant paperboard, which makes it suitable for the primary packaging of skin creams.

“We are seeing increasing demand in the cosmetics field for new innovative solutions made of renewable materials. Cosmetics brands that want to appeal to eco-conscious consumers now have a competitive new alternative to plastic tubes,” says **Henna Paakkonen-Alvim**, Vice President, Innovation, Stora Enso Consumer Board division.

For manufacturing of the tubes, Stora Enso co-operates with Aisa, a world-leading tube machinery manufacturer. The runnability of the board has been tested on Aisa’s machinery to ensure flawless and efficient converting performance.

“We can be change agents together with Stora Enso and thereby push packaging innovation forward. With paperboard as a new, renewable material option to run on our tube machines, Aisa continues to serve the needs of the global packaging industry with cutting edge technologies,” says **Jacques Thomasset**, R&D Director at Aisa.

The body of the tube is 70% based on renewable fiber. As a next step, we are working to replace the plastic shoulder and cap of the tube with our biocomposite material containing 35% renewable fiber.



**Environment,
recyclability
and safety**

Chinese consumers appreciate sustainability

We wanted to understand more about Chinese consumers' packaging perceptions and preferences, especially on paper and board packaging. So we conducted a study with Ipsos in major Chinese cities. The results show that the sustainability of packaging is becoming increasingly important for local consumers.

The top three things that make a package sustainable for Chinese consumers are environment, recyclability and safety. In the wake of past food safety issues, the consumers value packages' ability to keep the contents safe and fresh, and they would appreciate more protective packaging. Sustainable packaging was also described as eco-friendly, energy-saving and with a low carbon footprint.

For Chinese consumers, sustainability is associated with safety and the reliability of a brand. They look for clear environmental communications. According to the study, 76% of the respondents prefer packaging that is labelled as recyclable. 70% are willing to pay an extra 10% for products with FSC-labelled packaging, even if many of them don't really understand its meaning. The study also shows that the most important factor is the usability of packaging – it has to provide the protection needed and be convenient to use.

The respondents considered paper and board to be eco-friendly packaging materials and easy to use in all the product categories studied.

The target categories in the scope of the study were cosmetics, pharmaceuticals, take-away food and high-end food products such as chocolate, tea and bakery products. The qualitative part of the study was carried out in Shanghai and Chengdu, while a quantitative survey covered 2 000 respondents in eight Tier 1-2 cities in China.

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Material: Ensocoat 2S 220 g/m²

Layout: Vitosmedia Oy

Printer: Grano 11/2019

www.storaenso.com

